



# Charting our Transition to “Interactive Digital Textbooks”

March 29, 2012

# LEAD Commission Overview

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## Objectives

- ◆ Assess where we are now
- ◆ Identify opportunities where technology can drive improvement
- ◆ Understand precedent digital transitions in other sectors
- ◆ Compare the U.S. internationally
- ◆ Develop “blueprint” for digital learning
- ◆ Build collective will to act

## Deliverables

- ◆ November 2012 publication and dissemination
- ◆ Set of short presentations, videos and accompanying reports and materials
- ◆ Website as ongoing portal for information on technology in education

# TV Programming Choices in 1966

1965									
1966									
	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30
SAT	ABC Local	Local	Share		Lawrence Welk Show		The Hollywood Palace		ABC Scope
SAT	CBS Local	Local	Jackie Gleason Show		Pistols 'N' Petticoats	Mission: Impossible		Gunsmoke	
SAT	NBC Local	Local	Flipper	Please Don't Eat the Daisies	Get Smart	Saturday Night at the Movies			
SUN	ABC Local	Voyage to the Bottom of the Sea		The FBI		The Sunday Night Movie			
SUN	CBS Local	Leslie	It's About Time	Ed Sullivan Show		Garry Moore Show	Candid Camera	What's My Line	
SUN	NBC Local	Belk Telephone Hour/NBC News Specials	Walt Disney's Wonderful World of Color		Hey Landlord!	Bonanza		Andy Williams Show	
MON	ABC Local	Local	Iron Horse		The Rat Patrol	The Felony Squad	Peyton Place	The Big Valley	
MON	CBS Local	Local	Gilligan's Island	Run, Buddy, Run	The Lucy Show	Andy Griffith Show	Family Affair	Jean Arthur Show	I've Got a Secret
MON	NBC Local	Local	The Dick Van Dyke Show	I Dream of Jeannie	Roger Miller Show	The Road West		Run For Your Life	
TUE	ABC Local	Local	Combat!		The Rounders	The Perils of Southampton	Love on a Rooftop	The Fugitive	
TUE	CBS Local	Local	Daktari		Red Skelton Hour		Petticoat Junction	CBS News Specials	
TUE	NBC Local	Local	The Girl From U.N.C.L.E.		Occasional Wife	Tuesday Night at the Movies			
WED	ABC Local	Local	Batman	The Monroes		The Man Who Never Was	Peyton Place	ABC Stage 67	
WED	CBS Local	Local	Lost in Space		The Beverly Hillbillies	Green Acres	Gomer Pyle, USMC	Danny Kaye Show	
WED	NBC Local	Local	The Virginian			Bob Hope Show and Specials		I Spy	
THU	ABC Local	Local	Batman	F Troop	Tommy Grimes Show	Bewitched	That Girl	Hawk	
THU	CBS Local	Local	Jericho		My Three Sons	The CBS Thursday Night Movies			
THU	NBC Local	Local	Daniel Boone		Star Trek		The Hero	Dean Martin Show	
FRI	ABC Local	Local	The Green Hornet	The Time Tunnel		Milton Berle Show		12 O'Clock High	
FRI	CBS Local	Local	The Wild, Wild West		Hogan's Heroes	The CBS Friday Night Movies			
FRI	NBC Local	Local	Tarzan		The Man From U.N.C.L.E.		T.H.E. Cat	Laredo	



# Programming Choices Today

Channels & Packages			
DISH Network <i>Exclusive Channels</i> AVAILABLE TO ALL CUSTOMERS			
DIS1	Base	225	PG-13
DIS2	Base	225	PG-13
DIS3	Base	225	PG-13
DIS4	Base	225	PG-13
DIS5	Base	225	PG-13
DIS6	Base	225	PG-13
DIS7	Base	225	PG-13
DIS8	Base	225	PG-13
DIS9	Base	225	PG-13
DIS10	Base	225	PG-13
DIS11	Base	225	PG-13
DIS12	Base	225	PG-13
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DIS14	Base	225	PG-13
DIS15	Base	225	PG-13
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DIS98	Base	225	PG-13
DIS99	Base	225	PG-13
DIS100	Base	225	PG-13



NETFLIX



hulu



redbox

amazon.com

Google TV



FANCAST™

Channels & Packages			
America's Top 120 with HD			
DIS1	Base	225	PG-13
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DIS3	Base	225	PG-13
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DIS5	Base	225	PG-13
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DIS100	Base	225	PG-13



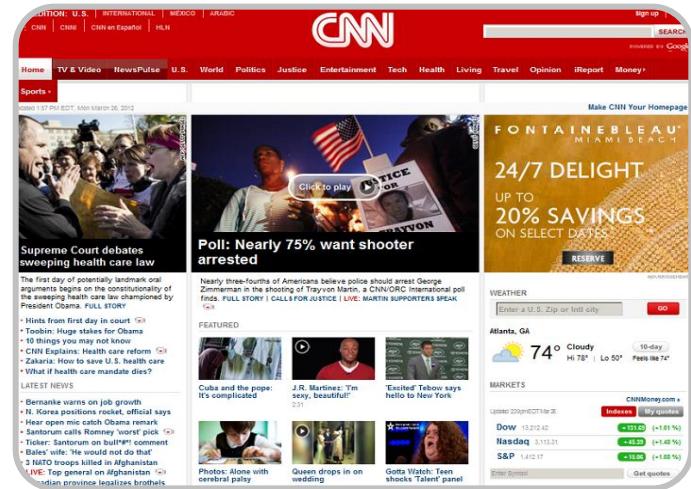
# Precedent Digital Transformations

Past

News Media



Current



Music

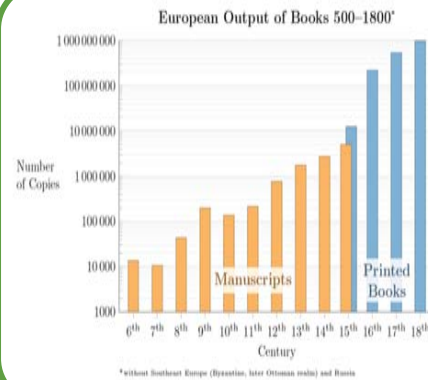


# Historical Education Perspectives

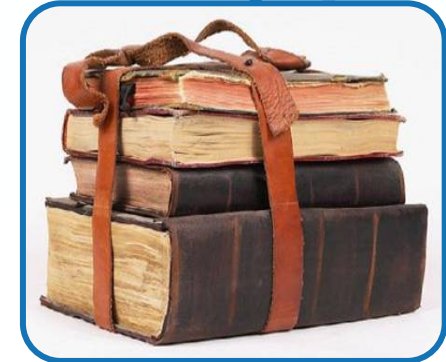
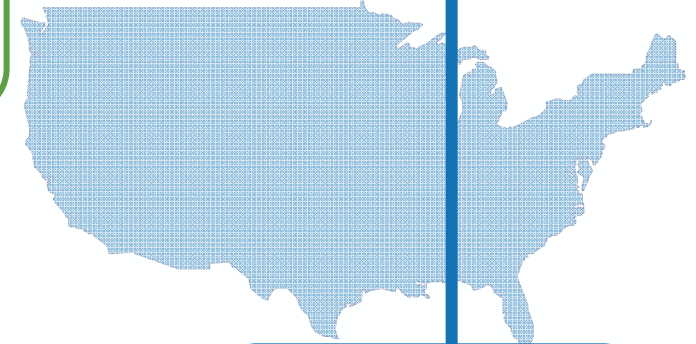
## Early Middle Ages



## Medieval Europe



## 18th and 19th Century America





# Historical Education Perspectives

Early  
Middle Ages

Medieval  
Europe

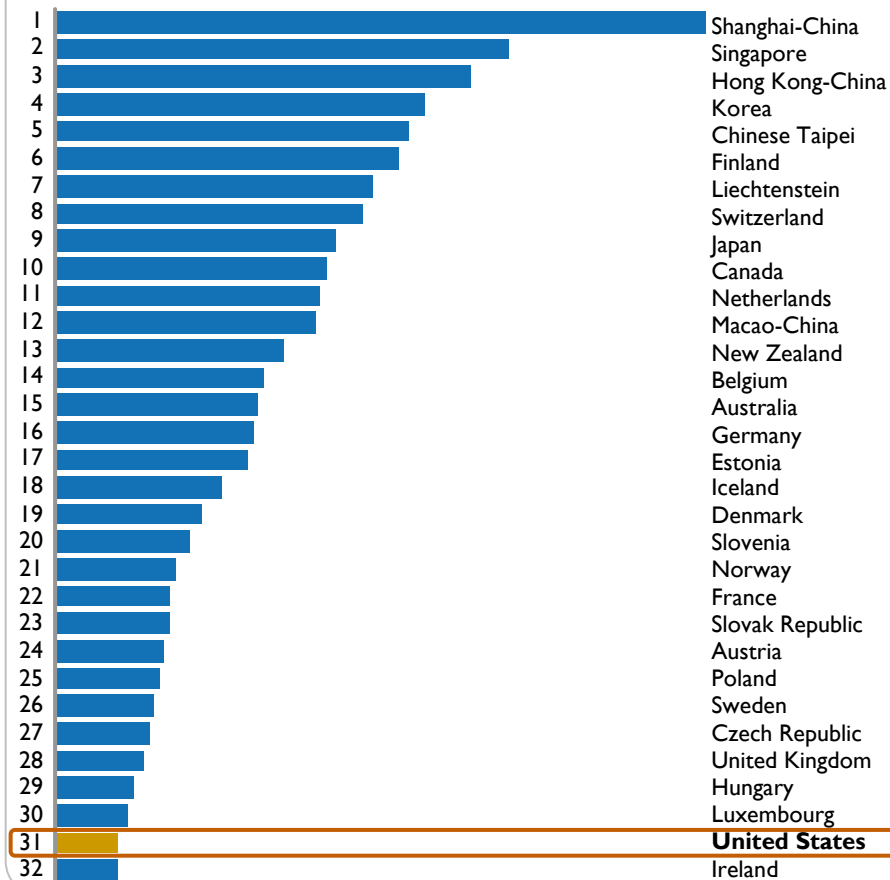
18th and 19th  
Century America

20th and 21st  
Century America

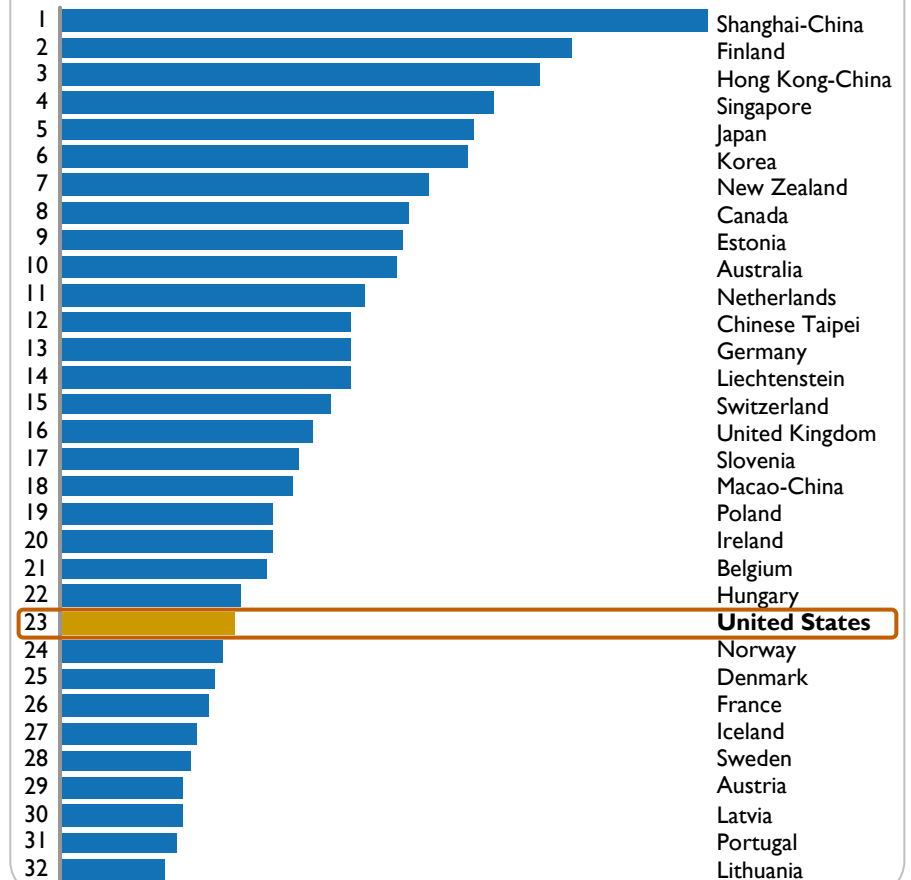


# Current State of U.S. Education

## Math – 2009 PISA Rankings



## Science – 2009 PISA Rankings



- ◆ The U.S. spends \$7 billion per year on K-12 textbooks, but many students still use 7-10 year-old books with outdated material
- ◆ South Korea is beginning the transition to all digital textbooks in 2015
- ◆ Singapore plans to train every teacher to teach online and provide online learning in 100% of secondary schools



# Digital Education Commentary

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- ◆ “By harnessing the power of technology in the classroom, we equip our educators with the tools they need to prepare our next generation of doers and thinkers for the jobs of tomorrow.”
  - President Obama, Digital Learning Day (February 1, 2012)
  
- ◆ “Today, I want to challenge everyone in the space – companies, government officials, schools and teachers – to do their part to make sure that every student in America has a digital textbook in the next five years.”
  - FCC Chairman Genachowski, Digital Learning Day (February 1, 2012)
  
- ◆ “Do we want kids walking around with 50-pound backpacks and every book in those backpacks costing 50, 60, 70 dollars and many of them being out of date? Or, do we want students walking around with a mobile device that has much more content than was even imaginable a couple years ago and can be constantly updated? I think it's a very simple choice.”
  - Department of Education Secretary Duncan, Digital Learning Day (February 1, 2012)

# Comfort with Change

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“ No one likes change  
except babies  
in diapers ”

- *Barbara Johnson*

“ A good hockey player  
plays where the puck is.  
A great hockey player plays  
where the puck  
is going to be ”

- *Wayne Getzky*

# A Challenge to Cherished Beliefs

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**“The world potential market for copying machines is 5000 at most.”**  
– IBM to the founders of Xerox, 1959

**“Who the hell wants to hear actors talk?”**  
– H.M. Warner, Warner Brothers, 1927

**“The phonograph has no commercial value at all.”**  
– Thomas Edison, 1880s

**“We don’t like their sound, and guitar music is on the way out.”**  
– Decca Recording Co, rejecting the Beatles, 1962

## Our Own Cherished Beliefs...

- ◆ Hour-long classes & seat time requirements
- ◆ Students grouped by age
- ◆ Paper textbook as primary supplement
- ◆ Limited testing feedback and reports (midterm and final)
- ◆ Lecture-based teaching



# Imperative to Adapt

## Late to Adapt



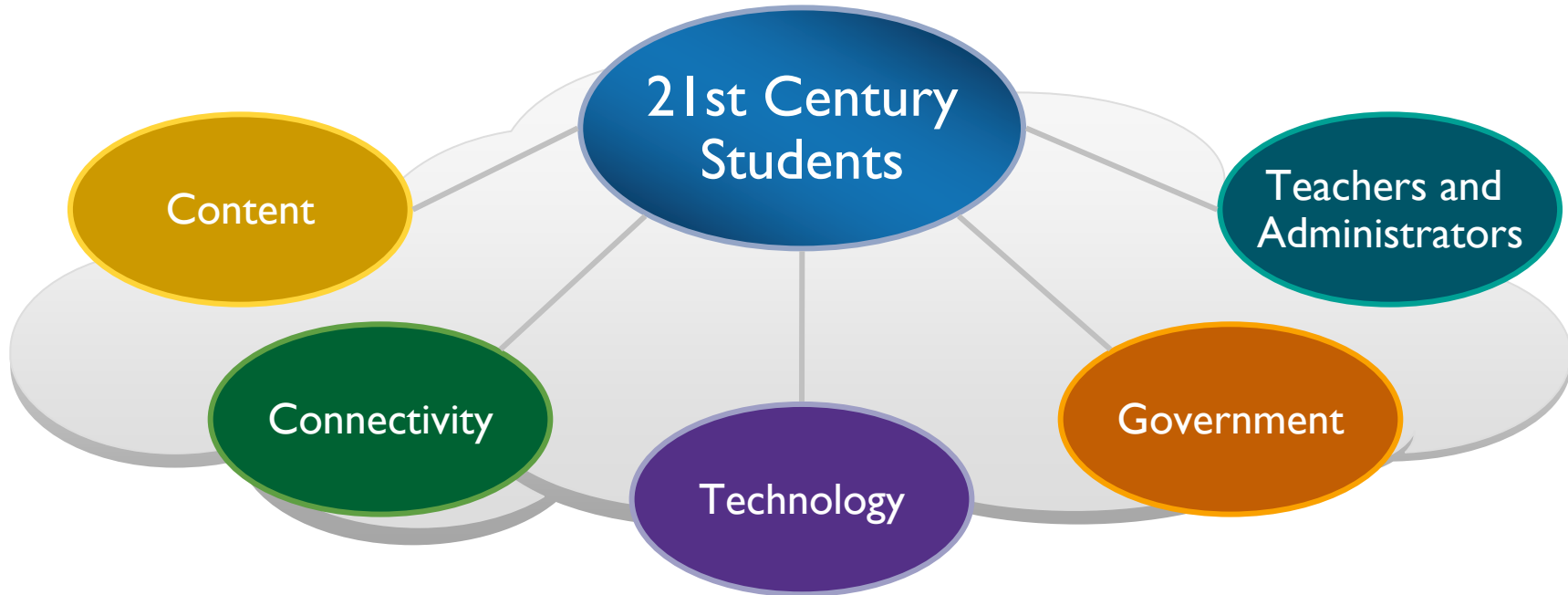
Former franchise leaders that failed  
or had a near death experience

## Adapted and Evolved



These companies are on average  
133 years old... each began in a  
different business than it is in today

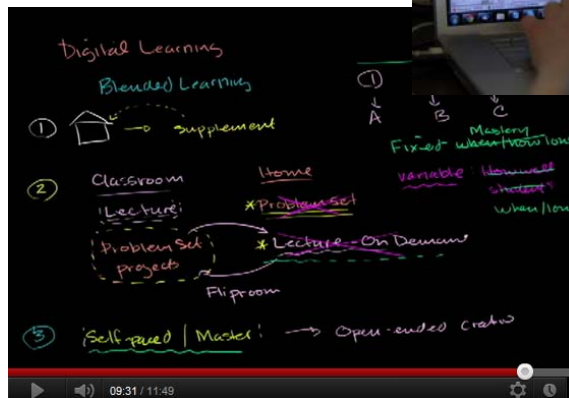
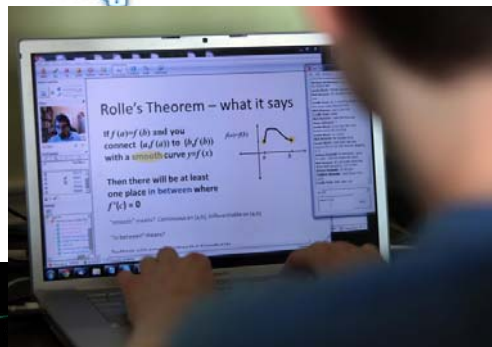
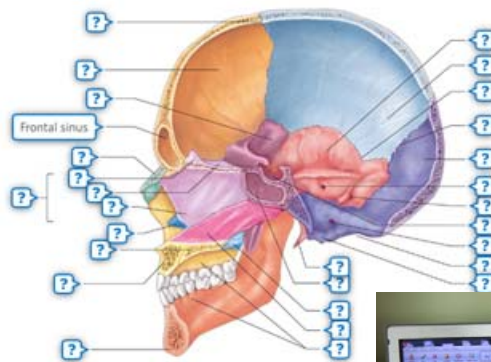
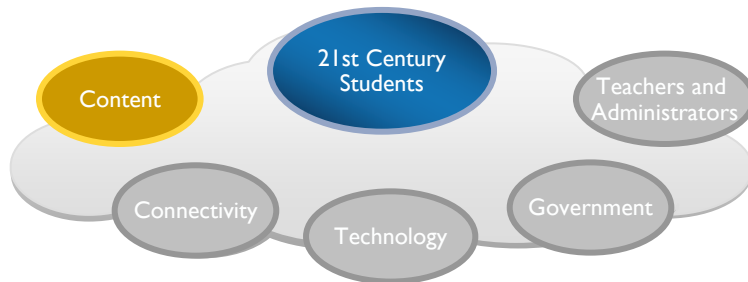
# Digital Learning Ecosystem



- ◆ Students are “digital natives”
- ◆ Technological competency is a workplace requirement
- ◆ Potential tipping point in digital adoption
- ◆ Measuring impact on student outcomes



# Digital Learning Ecosystem



## Opportunities and Challenges

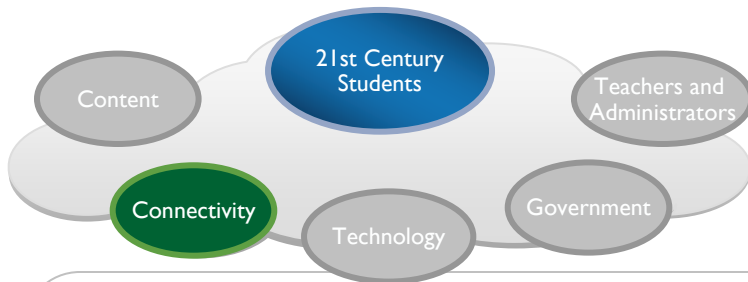
- ✓ Ability to create modular, interactive, and personalized digital learning content (not simply digital versions of paper books)
- ✓ Potential for new business models
- ✗ Encouraging investment and innovation

## Attendees

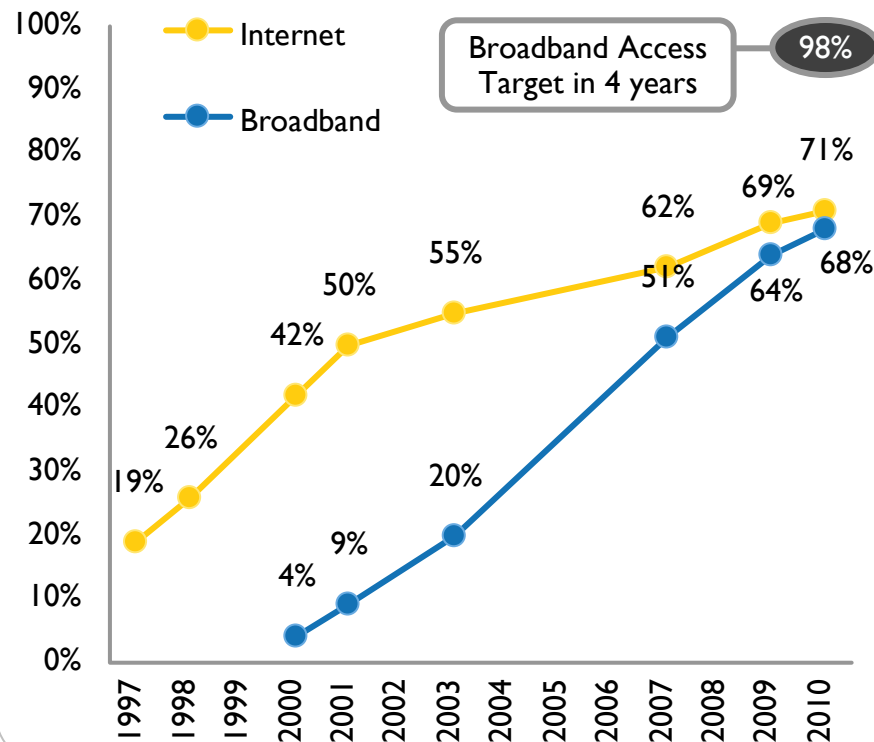
- ◆ Dan Caton, McGraw-Hill
- ◆ Will Ethridge, Pearson
- ◆ Jose Ferreira, Knewton
- ◆ Bill Goodwyn, Discovery Education
- ◆ Joel Klein, News Corp
- ◆ Matt MacInnis, Inkling
- ◆ Osman Rashid, Kno
- ◆ Dan Rosenweig, Cengage
- ◆ Linda Zecher, Houghton Mifflin Harcourt



# Digital Learning Ecosystem



**INTERNET ADOPTION**  
(Percent of U.S. Households)



## Opportunities and Challenges

- ✓ Growing broadband access (e.g., E-Rate)
- ✗ Access both at school and at home
  - Unevenly distributed across student populations (e.g., less than 50% of low-income students have broadband access)

## Attendees

- ◆ Dan Hesse, Sprint
- ◆ Philipp Humm, T-Mobile
- ◆ Dominic Orr, Aruba Networks

# Digital Learning Ecosystem



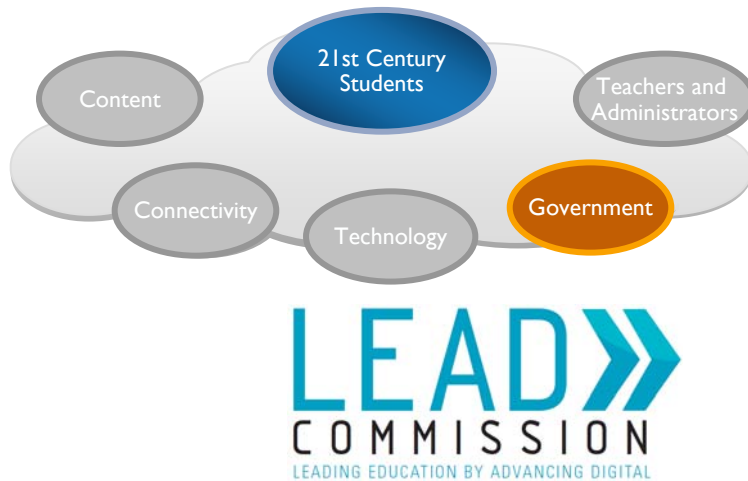
## Opportunities and Challenges

- ✓ Rapidly advancing device capabilities and declining unit costs
- ✗ Uncertainty around capital and training requirements
- ✗ Access both at school and at home

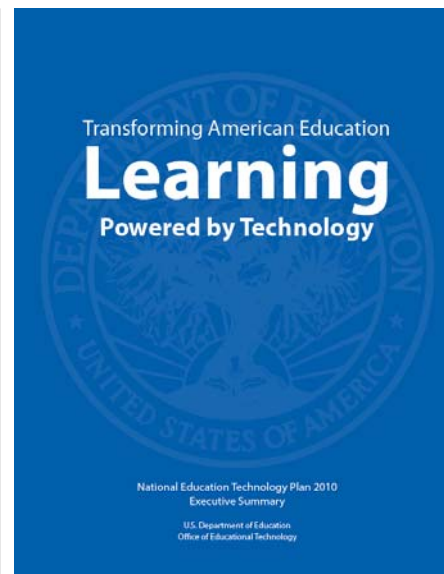
## Attendees

- ◆ Tim Baxter, Samsung
- ◆ John Couch, Apple
- ◆ Reed Hundt, Intel

# Digital Learning Ecosystem



**CONNECTING  
AMERICA:  
THE NATIONAL  
BROADBAND PLAN**



## Opportunities and Challenges

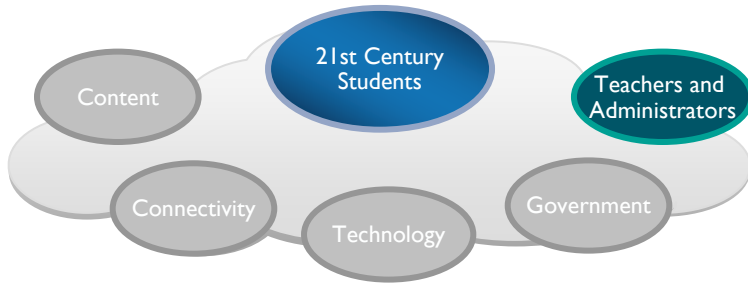
- ✓ Government agencies and others actively working to ensure access and affordability
- ✓ Adoption of Common Core standards
- ✗ How to address “seat-time” requirements, state adoption, course scheduling, categorical funding for textbooks and other policies

## Attendees

- ◆ Chairman Julius Genachowski, Federal Communications Commission
- ◆ Secretary Arne Duncan, Department of Education



# Digital Learning Ecosystem



## ◆ Rocketship Education

- Opened first hybrid school in 2007
- Individualized online instruction combined with classroom teaching
- Online Learning Lab



## ◆ Florida Virtual School

- State-sponsored virtual school
- Helped statewide teacher and budget crises and strengthened curriculum offerings



## ◆ Stanford Online High School

- Education Program for Gifted Youth (EPGY)
- Live-streaming lectures
- Virtual interactions with teacher, classmates



## Opportunities and Challenges

- ✓ Increasing acceptance of new teaching & learning models and technologies such as digital textbooks
- ✓ Online and blended learning are commonplace in higher education and lifelong learning
- ✗ Ensuring adequate training and support

## Attendees

- ◆ Tom Luna, Idaho Dept. of Education

# Digital Learning Challenges

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## Content

- ◆ How do we accelerate the creation of modular, interactive, and personalized digital learning content (not simply digital versions of paper books)?...How do we measure their effectiveness?

## Connectivity

- ◆ What are the most effective methods for providing affordable broadband access both at school and at home?

## Technology

- ◆ What new business models could allow students and teachers to utilize devices and other technologies now and in future product cycles?

## Government

- ◆ How do we ensure access and affordability and address regulations to enable and encourage adoption?

## Teachers and Administrators

- ◆ What training and ongoing support is necessary for acceptance of new teaching & learning models?